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10/591,854	06/14/2007	Sheng Liu	920093.403USPC	4251

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EXAMINER	
NEALON, WILLIAM	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/591,854	LIU ET AL.	
	Examiner	Art Unit	
	WILLIAM NEALON	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 6 and 16 are objected to because of the following informality: Both claims recite *the same physic channel.* Examiner assumes 'the same physical channel' was intended. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 5, 6, 7, 9, 11, 15, 16, 17 and 19** are rejected under 35 U.S.C.102(b) as being anticipated by Trompower (US Patent No. US 6132306 A), hereafter "**Trompower**".

For **Claim 1, Trompower** discloses - *A wireless base station operatively connected to a wireless network control device, another wireless base station and a subscriber unit, comprising:* (= wireless base station (210), network controller (220), another wireless base station (215) and SU (230). See abstract, (Col:5, Ln:58-67), (Col:6, Ln:12-22), (Col:6, Ln:60-67) and Figs. 2 & 9 - 12);

a first communication device for receiving downlink data frames from the wireless network control device and transmitting uplink data frames to the wireless network control

device; (= network communications via backbone (250, 1025) with NWK adapter. See (Col:34, Ln:8-22, Ln:39-41), (Col:37,Ln:40-41) and Figs. 2 & 9 - 11);

a second communication device for transmitting downlink wireless signals to the subscriber unit and receiving uplink wireless signals from the subscriber unit; (= base/SU radio transceiver (1010, 1035a). See (Col:34, Ln:50-58), (Col:37,Ln:40-41) and Figs. 2 & 9 - 11);

a channel processing device for processing the downlink data frames into the downlink wireless signals and processing the uplink wireless signals into the uplink data frames; (= network communications via backbone are processed at (1027a, 1029a,1031a) with NWK adapter. See (Col:34, Ln:10-25) and Figs. 2 & 9 - 11); *and*

a signal distribution unit for supplying the downlink data frames and the uplink wireless signals to the channel processing device for processing, (= signal distribution via (1025a, 1027a, 1029a, 1031a, 1054). See (Col:34, Ln:10-25) and Figs. 10 & 11);

characterized in that,

the wireless base station further comprising a third communication device for communicating with the another wireless base station, and the signal distribution unit further comprising: (= repeater controller transceiver (1012, 1035b). See (Col:35, Ln:21-31), (Col:36, Ln:48-54) and Figs. 2 & 9 - 12);

forwarding control means for transmitting the downlink data frames or uplink wireless signals to the another wireless base station and receiving corresponding downlink wireless signals or uplink data frames from the another wireless base station, through the third communication device. (= repeater transceiver (1012). See (Col:35, Ln:21-31), (Col:36, Ln:34-37) and Figs. 9 - 11);

For **Claim 5, Trompower** discloses - *The wireless base station of claim 1, characterized in that the forwarding control means is further configured to transmit the uplink wireless signals and downlink data frames to said another wireless base station, and receive corresponding downlink wireless signals and uplink data frames from said another wireless base station.* (= base station repeater controller transmits/receives and/or

forwards packets to/from other wireless base stations. See (Col:37, Ln:38-39), (Col:38, Ln:15-20) and Figs. 11, 13 & 14);

For **Claim 6, Trompower** discloses - *The wireless base station of claim 5, characterized in that said forwarded uplink wireless signals and said forwarded downlink data frames belong to the same physic channel* (1029). (= See abstract, (Col:31, Ln:57-62), (Col:37, Ln:38-39), (Col:38, Ln:15-20) and Figs. 9 - 12);

For **Claim 7, Trompower** discloses - *The wireless base station of claim 1, characterized in that said forwarding control means is further configured to exchange control signaling with said another base station.* (= See (Col:14, Ln:42-60), (Col:24, Ln:54-61));

For **Claim 9, Trompower** discloses - *The wireless base station of claim 1, characterized in that said another base station is configurable, and said forwarding control means is further configured to perform transmission and reception to and from the configured another base station.* (= See abstract and (Col:5, Ln:60-65), (Col:14, Ln:20-40), (Col:35, Ln:21-31), (Col:36, Ln:34-37), (Col:36, Ln:48-54) and Figs. 2 & 9 - 12);

For **Claim 11**, the analysis used in the rejection of claim 1 applies.

For **Claim 15**, the analysis used in the rejection of claim 5 applies.
For **Claim 16**, the analysis used in the rejection of claim 6 applies.
For **Claim 17**, the analysis used in the rejection of claim 7 applies.

For **Claim 19**, the analysis used in the rejection of claim 9 applies.

For **Claim 21, Trompower** discloses - *A communication method in a wireless base station which is operatively connected to a wireless network control device, another*

wireless base station and a subscriber unit, the wireless base station comprising a first communication device, a second communication device, a channel processing device and a signal distribution unit, the method comprising steps:

receiving downlink data frames from the wireless network control device through the first communication device (260, 1025a, 1027)*;* (= base station receives packet from the network's system backbone. See (Col:37, Ln:40-41) and Figs. 11 & 13);

transmitting uplink data frames to the wireless network control device through the first communication device (1027, 1025a, 260)*;* (= transmit to backbone. See (Col:38, Ln:35-36) and Figs. 11 & 13);

transmitting downlink wireless signals to the subscriber unit through the second communication device (1010, 1035a, 1039a)*;* (= transmit to SU See (Col:37, Ln:40-41) and Figs. 11 & 13);

receiving uplink wireless signals from the subscriber unit through the second communication device (1010, 1035a, 1037a)*;* (= base station receives packet from an SU. See (Col:37, Ln:35-37) and Figs. 11 & 13);

supplying through the signal distribution unit the downlink data frames and the uplink wireless signals to the channel processing device for processing (1029, 1031)*;* (= forward packet for processing. See (Col:37, Ln:41-43) and Figs. 11, 13 & 14); *and*

processing the downlink data frames into the downlink wireless signals and processing the uplink wireless signals into the uplink data frames in the channel processing device (1031, 1054)*;* (= See (Col:37, Ln:41-43) and Figs. 11, 13 & 14);,

wherein the wireless base station further comprising a third communication device for communicating with the another wireless base station, and the method is characterized in that the providing step further comprising:

transmitting the downlink data frames or the uplink wireless signal to the another wireless base station through the third communication device (1012, 1035b, 1039b)*;* (= transmit to another wireless base station. See (Col:38, Ln:15-20) and Figs. 11 & 13); *and*

receiving corresponding downlink wireless signals or uplink data frames from the another wireless base station through the third communication device (1012, 1035b,

1039b); (= base station receives packet from another wireless base station. See (Col:37, Ln:38-39) and Figs. 11 & 13);

For **Claim 22**, the analysis used in the rejection of claim 21 applies.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

5. **Claims 2, 3, 8, 12, 13 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Trompower**, in view of Ogino et al. (US Patent Application Publication No. US 20020032031 A1), hereafter "**Ogino**".

For **Claim 2, Trompower** explicitly fails to disclose - *The wireless base station of claim 1, characterized in that the forwarding control means is further configured to transmit frame timing information relating to the uplink wireless signals or downlink data frames transmitted to said another wireless base station to said another wireless base station.*

However, **Ogino,** in a similar endeavor, teaches a repeater function for relaying signals. One function of the control channel is for indicating a system clock time and a frame format and identifying each channel position. Other control information contains clock supplier Id. (= See abstract, paragraphs [0014, 0016, 0030, 0036, 0067-0068, 0104, 0163] and Fig. 1);

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of **Ogino** with the system of **Trompower** for the advantage of obtaining another resource and approach citing timing and synchronization over a control channel of devices implementing wireless repeating / forwarding functions.

For **Claim 3, Ogino** discloses - *The wireless base station of claim 2, characterized in that said frame timing information is the wireless base station local frame timing and the cell system frame timing information.* (= System clock and 'clock supplier' device provide the sync timing. See [0014, 0030, 0036 0068, 0107]);

For **Claim 8, Trompower** explicitly fails to disclose - *The wireless base station of claim 7, characterized in that said control signaling comprises channel processing resource query, allocation control, establishment, modification and release operating commands. 0036*

Ogino, however, recites allocation control, channel reservation and other signaling on the control channel. (= See abstract, paragraphs [0012, 0036, 0030, 0036-0038] and Fig. 3);

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of **Ogino** with the system of **Trompower** for the benefits realized by utilizing a control channel for various signaling events separately from traffic channel information.

For **Claim 12**, the analysis used in the rejection of claim 2 applies.

For **Claim 13**, the analysis used in the rejection of claim 3 applies.

For **Claim 18**, the analysis used in the rejection of claim 8 applies.

6. **Claims 4 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Trompower**, in view of Wallace et al. (US Patent Application Publication No. US 20030174666 A1), hereafter "**Wallace**".

For **Claim 4, Trompower** explicitly fails to disclose - *The wireless base station of claim 1, characterized in that the forwarding control means is further configured to advance the corresponding transmission by a time amount greater than or equal to the round trip transmission delay between said wireless base station and said another wireless base station, relative to the frame timing relating to the uplink wireless signals or downlink data frames transmitted to said another wireless base station.*

However, **Wallace,** in a similar effort to achieve wireless communication system synchronization, teaches a wireless base station measuring time of arrival of signals from other base stations, determining the timing differences and adjust the base station timing using either a centralized processor or a base station hierarchy. (= See abstract, [0022, 0033, 0044, 0052, 0061, 0063] and Figs. 1 - 6);

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of **Wallace** with the system of **Trompower** for the benefit of further defining the time of arrival delay between base stations as a determining factor for adjusting transmit frame timing.

For **Claim 14**, the analysis used in the rejection of claim 4 applies.

7. **Claims 10 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Trompower**, in view of Hellhake et al. (US Patent Application Publication No. US 20040014494 A1), hereafter "**Hellhake**".

For **Claim 10, Trompower** explicitly fails to disclose - *The wireless base station of claim 9, wherein said another wireless base station's configuration is decided by said*

wireless network control device, or said wireless base station, or said another wireless base station, or a third party wireless base station, or through the negotiation between wireless base stations.

However, **Hellhake,** in a similar endeavor, teaches a control center that can dynamically reconfigure the access nodes. (= See abstract, paragraphs [0013, 0022, 0027-0028, 0035] and Fig. 5);

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to have combined the teachings of **Hellhake** with the system of **Trompower** for the benefit of having the ability to configure wireless base stations through a number of methods and sources.

For **Claim 20**, the analysis used in the rejection of claim 10 applies.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent Application Publication No. US 20040038647 A1 - Local area network having multiple channel wireless access.
- US Patent No. US 6119016 A - Synchronizing base stations in a wireless telecommunications system.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bill Nealon whose telephone number is (571) 270-7795. The examiner can normally be reached on Mon-Thurs from 9:00-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Lewis West, can be reached on (571) 272-7859. The fax phone number for the organization where this

application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/WILLIAM NEALON/
Examiner, Art Unit 2617

/Lewis G. West/

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